

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1. (presently amended) A high density output array of multiple yeast strains in the haploid state, wherein each yeast strain in the output array contains at least two deletion mutations, and wherein the deletion mutations are different in each yeast strain in the output array, the output array resulting from the mating of at least a test strain and an two input arrays array containing yeast strains of different haploid mating types, wherein the mating product of the test strain and the input arrays array is an intermediate array containing diploid yeast strains, with the diploid yeast strains then undergoing sporulation to result in the output array containing haploid yeast strains, wherein the haploid yeast strains in the output array have the same haploid mating type, wherein the input arrays comprises multiple starting strains of yeast selected from either the *Saccharomyces cerevesiae* or the *Schizosaccharomyces pombe* species, wherein at least one of the input arrays array comprises starting yeast strains carrying a deletion mutation linked to a dominant drug resistant marker, wherein each starting yeast strain carries at least one deletion mutation, with the deletion mutation being different in each starting yeast strain, wherein the test strain comprises a mutation in a yeast gene selected from the group consisting of bni1, arc40, bim1, sgs1, bbc1, arp2, nbp2, and rad27 and the input array comprises one or more of 4,644 non-lethal gene mutations in *Saccharomyces cerevesiae*.

2-5. (canceled).

6. (previously presented) The output array of claim 1, wherein the yeast strains are located on plates, with between about 9 and about 6200 yeast colonies on one plate.

7-78 (canceled)

79. (previously presented) The output array of claim 1, wherein the starting yeast strains carry selectable markers to permit efficient recovery of haploid spore progeny.

80. (previously presented) The output array of claim 79, wherein the selectable markers are mating type specific promoters which permit selection of particular haploid mating types.

81. (previously presented) The output array of claim 1, wherein the genetic alterations in the starting yeast strains further comprise a genetic tag.

82. (previously presented) The output array of claim 81, wherein the genetic tag is a unique 20mer oligonucleotide sequence.

83. (previously presented) The output array of claim 1, wherein one of the at least two input arrays consists of haploid yeast strains of the MAT $\alpha$  mating type and a second of the at least two input arrays consists of the MAT $\alpha$  mating type.